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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,706	03/30/2004	Manabu Kitamura	16869B-103600US	7212

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EXAMINER

SCHLIE, PAUL W

ART UNIT

PAPER NUMBER

2186

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/814,706	<b>Applicant(s)</b> KITAMURA, MANABU	
	<b>Examiner</b> Paul W. Schlie	<b>Art Unit</b> 2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1, 4, 19-26 is/are pending in the application.
- 4a) Of the above claim(s) 2-3, 5-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4, 19-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Claims 1, 4 and 19-26 have been examined as amended; with claims 2-3 and 5-18 being withdrawn, and claims 19--26 being added.

### ***Response to Arguments***

1. Applicant's arguments filed 2/13/06 have been fully considered but they are not persuasive, and/or moot based upon the reference's refined interpretation.

As per claim 1, upon which all remaining claims depend; upon further review of the references cited, it is clear that Korngiebel et al. (5,416,914) does teach that a log of management information associated with the management of attributes and/or history associated with a data storing area including "..., fault history, ..., etc." may be maintained in a database storage area distinct from that of the of the data storing area (see column 3 lines 1-35, column 4 lines 34-60, column 15 lines 1-53, and figure 10 elements 1012 1013); thereby in further view of that taught by Nagai (6,236,626) who further more explicitly teaches that management operation instruction history may be logged to a storage area distinct from that of the data storage area, to aid in the identification of an "operation error, or failure" of either data storage or management instructions (see column 2 lines 52-56, or as may have resulted from a malicious operator management instruction potentially effecting the otherwise reliable authenticity of the stored data), it is considered that one of ordinary skill in the art would consider all corresponding limitations as obvious at the time of the claimed invention. The rejections have been correspondingly clarified. (As further evidence of prior art, although not cited

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as the basis of the rejection, please see Knight et al. US 2003/0149726, which also teaches all cited limitations of the claimed invention although generalized to SANs.)

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3-4 and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Korngiebel et al. (5,416,914) in further view of Nagai (6,236,626).

As per claim 1, Korngiebel et al. teaches a storage system coupled to a host computer via a first interface (figure 1, elements 171/132), the storage system comprising: a second interface (figure 1, elements 120-122) coupled to a computer enabling access to storage system management; a storage controller including a processor which manages host and management access to the storage system inclusive of storage allocation, media state, and correspondingly configured access privilege attributes (see column 3 lines 1-35), such that said allocation, media state, and/or corresponding event/failure histories may be maintained in a distinct database; where although Korngiebel et al. may not be considered to teach that generalized management instructions may be correspondingly (although likely obviously) logged, Nagai teaches a similar storage system (see figure 2, column 1 lines 6-10, and column 2 lines 23-32), within which a log of operations/instructions resulting from potentially either data and/or management requests may be maintained in a storage are distinct

from that of a data storage area to aid in the identification of "operation error, or failure" (see column 2 lines 52-56, or as may have obviously resulted from a malicious operator management instruction potentially effecting the otherwise reliable authenticity of the stored data). It is thereby considered obvious to one of ordinary skill in the art at the time of the claimed invention to combine that taught relevant to the claims, for the benefit of maintaining a history log of requested management operations and/or current resulting state distinct from that of the data storage area being inherently restricted from host access through a second interface, such that the log may be later independently and securely queried to determine a current configuration and/or source of accidental and/or potentially malicious failure of integrity of the said storage system's logical data storage area and/or interface.

As per claim 4, being dependant on claim 1, both Korngiebel et al. and Nagai further teach that the storage may be composed of disk drive arrays (see Korngiebel et al. column 15 lines 24-26, and Nagai column 3 lines 14-15).

As per claim 19, being dependant on claim 1, Korngiebel et al. further teaches that controllable system management attributes include read-only protection (see column 15 lines 50-53). It is considered obvious to one of ordinary skill in the art to include modification to storage protection attributes in log files if maintained, for the benefit of their review as may be desired.

As per claim 20, being dependent on claim 1, Nagai teaches that I/O operations may be logged (see column 4 lines 15-25).

As per claim 21, being dependant on claim 1, although neither reference teaches that management operations may be stored separately from I/O operation history logs, it is considered obvious to one of ordinary skill in the art to store them either separately and/or merged as may be desired and/or most convenient.

As per claims 22-26, being dependent on claim 1, it is considered corresponding taught and obvious to one of ordinary skill in the art that log logical volume management attribute operations in general may be logged, that a such a log may be stored within any logically configured volume which may be logically distinct from the logical volumes visible to a host regardless of the physical composition of those said logical storage devices, and that logical volumes may be given an attribute of being read only, within such a system.

Any limitation not otherwise more explicitly addressed above is correspondingly considered clearly inherent in that taught, obvious to one of ordinary skill in the art at the time of the disclosed invention, and/or not sufficient to patentably distinguish over prior art.

### ***Conclusion***

1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul W. Schlie whose telephone number is 571-272-6765, or whose email address is [paul.schlie@uspto.gov]. The examiner can normally be reached on Mon-Thu 8:00-6:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on 517-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



PIERRE BATAILLE  
PRIMARY EXAMINER

3/2/06